of $-P^{-1}\Delta V/V_0$ versus P has a slope of $-b_v$ and intercept a_v. The older unit, kg cm^{-2}, is used to allow for direct quotation of compression data. Bridgman's specimens, denoted as A and B in Fig. 2, are, respectively, 99.9 and 99.95+ per cent pure. Sample B was adopted as a basis for comparison since it has both higher purity and less scatter.

Clearly there is a large discrepancy between the two types of experiments. The intercepts, a_v, differ by about 6 per cent and the slopes, $-b_v$, differ by more than a factor of four.

The compression measurements were made in an iron piezometer which determined the change in length of the sample relative to iron, while the present work is an absolute determination. Bridgman did an absolute measurement of the iron reference, but as pointed out by Rotter and Smith(1), the compression results failed to match their (absolute) ultrasonic iron experiment. Furthermore, several other incompressible elements (Al(16), Si(17), Cu(18), and Au(19)) have ultrasonic coefficient, $b_v(c)$, by approximately the difference between the two iron experiments. These systematic differences between the two methods for the "b" coefficients are shown in Fig. 3, a display previously given by Rotter and Smith(1) but with tantalum added. It is seen that tantalum, which is the most incompressible of these solids, also shows the systematic difference between $b_v(u)$ and $b_v(c)$, and in fact fits in very nicely.

Rotter and Smith have already given a similar display of the systematic difference in compressibility, $a_v(u) - a_v(c)$, which includes